DOCUMENT RESUME

ED 259 502 EC 180 238

AUTHOR Breen, Catherine; And Others
TITLE The Training and Generalization of Social Interactio.. during Breaktime at Two Job Sites in the Natural Environment.
INSTITUTION Marin County Office of Education, San Rafael, CA.; San Francisco State Univ., Calif.
SPONS AGENCY Special Education Programs (ED/OSERS), Washington, DC.
PUB DATE Aug 84
GRANT G008104154
NOTE 31p.; In its: The Socialization Research Project. Final Report, Appendix C, August 1984 (EC 180 236).
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Autism; *Generalization; High Schools; *Interaction; *Interpersonal Competence; Peer Relationship

ABSTRACT

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The Training and Generalization of Social Interaction during Breaktime at Two Job Sites in the Natural Environment*

Catherine Breen, Thomas Haring,
Valerie Pitts-Conway and Robert Gaylord-Ross

San Francisco State University
and
Marin County Office of Education

Running Head: Social Interaction during Breaktime

EC180238

*The research was supported by a Field Initiated Research Grant, #G008104154, Special Education Programs, U.S. Department of Education.

Abstract

Four high-school level, severely handicapped autistic students were trained to initiate and sustain social interactions with nonhandicapped peers in a commonly shared break room at two community job sites. The generalization of social behavior to nontrained coworkers was probed in the same setting during natural break times. A multiple-baseline across subjects design was used to assess the effectiveness of a training package based on concurrent training of chains of responses using systematic prompting and reinforcement of correct behavior. Generalization was promoted using a multiple exemplar strategy. The results showed that all participants acquired a chain of social break behaviors using one peer trainer. Two participants displayed generalization of social responses prior to the acquisition of the complete chain. Two participants required training with multiple peers prior to the occurrence of generalization.

The Training and Generalization of Social Interaction during Breaktime at Two Job Sites in the Natural Environment

The feasibility of training and generalizing social skills has been repeatedly demonstrated with severely handicapped learners (Gaylord-Ross, Haring, Breen & Pitts-Conway, 1984; Hamre-Nietupski & William, 1976; Strain, Kerr, & Ragland, 1979; Strain, Shores, & Kerr, 1976; Strain, Shores, & Timm, 1977; Strain & Timm, 1974; Strain, Wiegerink, & Hester, 1975; Williams, Pumpian, McDaniel, Hamre-Nietupski & Wheeler, 1975). In spite of the general interest in programming for social interaction, the studies conducted to date have primarily been with young children who have been taught responses appropriate to free-play situations within school settings. As a consequence, relatively little is known about inducing social interaction with secondary, severely handicapped students in other natural settings.

As severely handicapped students approach and enter adolescence, the emphasis in instruction should change from a classroom based model to a community-oriented, service delivery model (Brown, Ford, Nisbet, Shirage, VanDeventer, Sweet, & Loomis, in press). Once service delivery is shifted to community situations, the relevance of social skill training oriented solely towards play and leisure contexts must be questioned. It is unlikely that social instruction organized around leisure responses in school settings will generalize to natural, community social contexts. For example, games and play activities which often structure social interactions in school situations are not present or appropriate in shopping, bus riding, or working

situations in the community. Thus, although severely handicapped learners may have been exposed to a social skills curriculum in order to foster integration into the public schools, a longitudinal program of social training is needed to facilitate successful integration into vocational settings (Gold, 1975; Mithaug & Haring, 1977) and community residences (Gollay, 1976).

In the present study a procedure was developed to promote interactive social behaviors between autistic students and their nonhandicapped coworkers during breaks from jobs at actual workplaces. The purpose of the study was to test a social training procedure that could be used in natural vocational environments. A key issue in social skill training is that the responses learned need to be generalized to coworkers. That is, once training has occurred, the learners should generalize the social responses to other coworkers in the absence of direct prompting or reinforcement to do so. Furthermore, the effects of a social skill training procedure should be evaluated not only by the acquisition and generalization of the targeted responses, but also by the reciprocal effects of the responses on the coworkers. Thus, in order to ensure that the social exchanges are functional in terms of community integration, the responses selected should be naturally reinforcing to both the handicapped workers and their coworkers.

Method

Participants

Four male students from a class for autistic and severely handicapped students participated in the study. The participants were diagnosed as autistic by an independent agency prior to their

enrollment in the school program. The participants attended school at a regular high school campus with numerous opportunities for social interaction. Although three of the participants had been trained to initiate social interactions during breaktimes at school, they had never attempted to initiate interactions with their coworkers during breaktime at their jobs. The participants were selected for use in the investigation based on the following criteria:

1. Each was capable of working for 10 to 15 min without direct prompting or reinforcement at vocational tasks.
2. Each could learn new skills through modeling and each could initiate five to six word statements.
3. Each showed an absence of spontaneous social responses in all settings unless the responses were specifically trained.
4. Each student required several exemplars before generalization to people or places occurred.

Don, 18 years old, was capable of completing a variety of functional tasks including riding public transit, shopping, and cooking basic meals. He could follow three-step commands and he would spontaneously request trips to a local pizza parlor, trips to the grocery store and food items. Don had a history of self-aggressive behavior including hand biting, head striking, breaking windows, and throwing objects. Such behaviors occurred at the rate of six to nine times per year and were usually precipitated by a change in his routine by parents or teachers. Don rarely initiated interactions with peers or instructors. He would respond "Hi" to greetings by staff or high school peers. He

typically avoided eye contact. During breaktimes, when approached by peers, Don would run to unoccupied areas within the break setting.

Mark, age 21, was also capable of many basic adaptive skills. He showed mastery of cooking simple meals, shopping for three to four items, and a variety of cleaning skills. Mark's expressive vocabulary contained approximately 100 words. He spontaneously requested food items, trips to the bathroom, and access to record albums. He followed two-step commands and understood approximately 150 words. Mark's social interaction patterns were highly stereotypic and predictable. Mark would approach familiar peers and repetitiously ask for food or objects held by others. Mark actively avoided eye contact and close proximity to others. He would respond to simple initiations but rarely acted as the initiator. Mark engaged in high rates of self-stimulatory behavior during his free time which functionally served to terminate contact with peers.

Jon, 18 years old, showed mastery of most basic adaptive self-help skills. Jon used a card communication system consisting of previously written statements which he would show to people in specific situations. His receptive vocabulary was approximately 200 words and he was able to follow two-step commands. Jon engaged in high rates of hand flapping and rocking during free time periods. Jon initiated interactions with several familiar peers. However, many of his initiations consisted of facial grimaces, giggling, hugging, and kissing. He rarely made eye contact with peers during social exchanges.

Earl, age 18, could independently dress, shop for three items using a hand-held calculator and a shopping list, and cook several simple meals. He would spontaneously request lunch, trips to the bathroom, and money for vending machines. His responses to questions or commands were completely or partially echolalic. For example, to the question "What are you doing?" he would answer "You are doing the work." His speech was clear, yet labored and mechanical. Earl had a receptive understanding of approximately 150 words and was able to carry out two-step directions. Earl had received little social skill training prior to the study. He never spontaneously approached peers to initiate interactions, but he would not actively avoid peers if they approached him.

The Training Coworkers were four high school students, 17-18 years old. High school students were used during training sessions rather than utilizing actual coworkers in order to maintain the purity of the natural setting and the perceptions of the employees toward their handicapped coworkers. The type of contact one has with persons with severe handicaps often effects the subsequent perceptions of those individuals. Some researchers have suggested that establishing a teacher-student relationship between two individuals might lower one's overall attitude toward that individual in need of instruction (Voeltz, 1982). Consequently, it was decided to use persons not in the natural environment for the purposes of training. The high school students were volunteers who had no previous contact with the handicapped participants prior to the study. They received high school credit for participation in the investigation. All of the training coworkers were trained to respond socially in the manner

described in Table 1 prior to the study through role-play activities. A script was supplied to the coworkers. The importance of being "natural" during an interaction was emphasized. In other words, each training coworker was encouraged to alter his responses from session to session in order to train the participants to generalize the trained behaviors to a variety of stimuli; each was instructed to simulate breaktime behavior characterized by assuming a relaxed position in a chair near a coffee table, and browsing through magazines; and each was instructed only to respond to and produce initiations which were appropriate to the social situation, and to refrain from prompting, correcting, or reinforcing behavior. The experimenter was to provide all systematic prompts, corrections, and reinforcers during a training session.

Insert Table 1 about here

The Natural Coworkers were people who held regular jobs at the vocational sites. Natural coworkers ranged in age from 18 to 50 years old. Typically, the same natural coworker would be present during work and break times.

Settings and Tasks

Two businesses were used in the study. The selection of environments was based on: (1) the close proximity of each site

to the school campus, allowing for the feasibility of training with peer tutors, and independent mobility to and from the job site by each of the participants; (2) task requirements for each site being teachable and similar to already familiar vocational tasks; and (3) the potential for volunteer status to transition to paid employment. Don and Jon worked for one hour per day (10:00 - 11:00 am) in a retirement complex spread over three acres of land. Their duties included weeding, watering, raking, sweeping, turning flower beds, painting, and vacuuming. A breakroom located at the center of the complex was used by all workers. Breaks were taken intermittently by all staff with 5-10 workers on break at any given time. Social skill training was conducted in the breakroom. The room was 3 x 8 m and contained a 1 x 4 m table, eight chairs, a hot water dispenser, instant coffee, cups, spoons, sugar, and cream.

Mark and Earl worked for one hour per day (1:00 -2:00 pm) in a French restaurant. Their jobs were to bus and wash tables, rinse and load dishes into a commercial dishwasher, and put items away after clearing. They worked among 15 other employees. Breaks were taken in the main restaurant after the lunchtime crowd had left. Typically, coworkers would gather in groups of 5 or 6 people at various tables in the restaurant. Coffee, cups, spoons, sugar, and cream were available at a counter in the back of the restaurant.

Procedure

Baseline and generalization probes. Two types of probes were conducted; baseline probes at the simulated breaktime with

training cow :kers; and generalization probes at the natural breaktime with natural coworkers. At least one training baseline probe was conducted randomly in the presence of each of the four training coworkers during the baseline phases for each participant. The baseline training probes began when the instructor gave a cue to "take a break". The student was given 20 sec to f nish his task and leave the work area. If he did not appropriately respond to the cue, the experimenter verbally and physically prompted the student to go to the breakroom and repeated the cue "take a break." One of four training coworkers was present in the setting. The experimenter removed herself from the breakroom to a position outside the door or on the other side of the kitchen/restaurant passthrough, where she was able to clearly hear and observe the social behavior produced by the participants.

All generalization probes were conducted during the natural breaktime in the same manner as the baseline training probes with the exception of the presence of 5-10 natural, nontrained coworkers and the absence of the training coworkers. During both baseline and generalization probe sessions, no prompts or reinforcers were given by the experimenter or the training coworkers once the participant was in the setting and had been given the cue to take a break.

Social skills training. Training was conducted individually with only the first author, the student, and one training coworker present. Training occurred at least a 1/2 hour after the natural break in the work setting. No natural coworkers were present during training sessions. A multiple exemplar strategy (Stokes &

Baer, 1979) was employed to promote generalization. That is, the student was first trained to initiate and interact with one training coworker. Meanwhile, generalization probes were taken during the natural breaktime. If the student reached criterion (80% of the social steps from the task analysis in Table 2) but had not generalized to natural coworkers, social training with a second training coworker was begun. Thus, training coworkers were progressively added until generalization occurred to at least three different natural coworkers.

Insert Table 2 about here

The training was organized following a concurrent task (Gaylord-Ross, 1981; Schroeder & Baer, 1972) or total task strategy. Each training trial began with the student at work. The experimenter then gave a cue to "take a break." The student was verbally praised if he independently performed any step from the task analysis. If the student did not initiate the next step in the sequence within three sec, a prompting strategy was implemented. Prompts were given in the following sequence: 1) indirect verbal (e.g., "what do you do next?"), 2) direct verbal (e.g., "go make coffee"), 3) gestural (e.g., point to coffee), 4) partial physical (e.g., guide hand to spoon) and 5) full physical (e.g., guide hand to spoon, place on spoon, and push fingers to grasp spoon). All verbal social responses were trained using either indirect models (e.g., "what do you say?") or direct models (e.g., say "want coffee?"). Prompts were given in the order of

least to most intrusive. Modifications made by the participants of the verbal responses, which altered the syntactical form of the statement but maintained the meaning, were judged as acceptable responses.

While verbal praise was initially given for each independent step from the task analysis it was subsequently thinned. After the students independently initiated a step three consecutive times, praise was thinned to every other time for that step. Once the student could independently respond to two consecutive steps on the FR-2 schedule, reinforcement for the preceding step was discontinued. Independence within the total chain of responses was built by gradually requiring more responses in sequence before praise was given. This was done by requiring the addition of one more correct step in a sequence from one session to the next. The multiple occurrences of praise were potentially available in the beginning of training as the entire chain was being learned. A participant might independently emit, for example, steps 1-4 in the task analysis, be reinforced for 4 independently produced behaviors, make errors on steps 5 and 6, produce steps 7-10, be reinforced again for 4 consecutive behaviors, make an error on step 11, and complete the chain independently. The following session would then require the production of at least five consecutive responses prior to the delivery of reinforcement. If the criterion for reinforcement was not met during a given session, it remained at the existing level. Verbal reinforcement was enthusiastic, yet brief, so as not to interfere with the natural flow of the chain. An error in responding during chain

training resulted in a correction procedure which was identical to the prompt sequence.

Following the strategy developed by Bellamy, Horner and Inman (1979), steps which proved difficult to learn (incorrect or no production of a given step for 10 consecutive sessions) were pulled out of the chain for massed trial instruction. That is, the S^D for that step was given and if the student did not produce the correct response within three sec, the prompting sequence was initiated. A total of 10 trials were conducted in a given massed trial session.

Training sessions lasted for approximately 15 min. A session consisted of one complete performance of the chain (a trial). If students engaged in aberrant behavior (defined as singing, saying nonsense statements, repeating commercials, striking self, others, or materials, running, or making repeated facial grimaces) during a session they were verbally prompted to continue to the next step in the task analysis. If their behavior continued, they were given a specific warning to stop the behavior. If the behavior still continued, the session was terminated and the participant was returned to work. Reinforcement in the form of a pleasant chat and sharing coffee or coke with the training coworker and experimenter followed each completion of a trial.

Measurement

During baseline, generalization, and training sessions the experimenter recorded the number of steps of the task analysis (Table 2) independently produced by the student. Data for the social steps in the task analysis (marked with an asterisk in Table 2) were separately analyzed from the purely motoric

responses in order to assess the acquisition and generalization of the social responses more sensitively than would be possible if the total chain were analyzed. Baseline probes were taken intermittently so as not to inadvertently train nonresponding in the breaktime setting. Measurements were taken at least one time out of every five consecutive work days with the assignment of probe to the day of week randomly determined. Once training was begun, generalization probes were to be conducted daily in order to assess the continuous linear relationship between the amount of training and the number of exemplars necessary and sufficient for the production of generalized social behavior. Generalization was scored at + for a session when the participant approached a coworker, emitted a greeting, and offered to get the coworker a beverage. All three behaviors were required in order for one occurrence of generalization to be scored.

Additionally, during generalization sessions with natural coworkers, anecdotal notes concerning the context and nature of the interaction were kept. The observer recorded the responses of the natural coworkers as accurately as possible. In addition, a subjective appraisal of the social interaction was made by coding the social willingness of the coworker into three descriptive categories; a) <u>active willingness</u> in the interaction was indicated by initiating other social exchanges or commenting on the ongoing responses of the participant; b) <u>passive willingness</u> was indicated by responding in a socially polite manner (i.e., saying "Hi" or "thank you" or "no, thank you" when offered coffee) but not extending the interaction; c) <u>active avoidance</u> was indicated by terminating the interaction by saying "no" to offers of coffee and

moving to another table or directing the participant to go to another table.

Agreement Checks

Agreement data was taken during training and natural probe times by having sessions scored by two observers. Three graduate students in special education served as reliability observers. The observers had extensive prior histories of recording behaviors in task analyzed chains. For all agreement sessions the observers stood at least four m apart.

Within the training context, agreement data was recorded an average of 26% of the baseline training sessions and 34% of the training sessions for each participant. The percent agreement as to the steps marked + or - was calculated according to the formula $\frac{A}{A+D} \times 100$ (where A = number of agreements on steps marked by each observer, and D = the number of disagreements). An inter-observer agreement of 100% was attained on all occasions when scoring the occurrence or nonoccurrence of social and motor behavior from the task analysis within the training context.

During the natural generalization probe times, agreement data was first taken regarding the occurrence or nonoccurrence of the three behaviors jointly required for generalization (approach + greet + offer) to nontrained coworkers. Again the formula $(\frac{A}{A+D}) \times 100$ was used to calculate the percent agreement between the two observers. Measurements were taken for each participant on an average of 29% of the baseline sessions, and 29% of the probes taken during the intervention phase. 100% agreement was found on all natural breaktime sessions where agreement data was scored.

Additionally, agreement measurements were taken regarding the quality of the response of the coworker in the natural setting to the initiation made by the participant. Of the 25 occurrences of generalization observed by the experimenter, 7 were also witnessed by an agreement observer. One out of 7 initiation behaviors (session #19 for Don) was judged by both observers to be responded to with an active avoidance reaction resulting in 100% agreement regarding that category. Five of the occurrences of generalization (sessions #20 and #22 for Don, #35 for Mark, #28 for Jon, and #55 for Earl) were scored by the experimenter as reacted to with passive willingness to interact, while the observers scored four of the initiation responses (sessions #20 and #22 for Don, #35 for Mark, and #55 for Earl) as resulting in passive willingness. The scoring of passive willingness reactions consequently showed 80% agreement between the observers. Finally, one response was scored by the experimenter as followed by active willingness to interact (session #31 for Jon), while the observers scored two instances of active willingness (session #28 and #31 for Jon). The percent agreement within this category was determined to be 50%. Agreement overall for subjective categorization was 85%. Percent agreement was again calculated using the formula $\frac{A}{A+D} \times 100$.

Experimental Design

A multiple baseline design across four subjects (Hersen & Barlow, 1978; Kazdin, 1982)) was used to assess the functional control of the participants' behavior by the training package.

After stable baselines were achieved in at least five consecutive sessions for each participant, one participant was randomly selected to receive intervention. When a reliable change in the first participant's behavior was attained the same treatment was then used to sequentially alter the behavior of the remaining three participants.

Results

The baseline sessions yielded 0% correct responding for all four participants (Figure 1). Once training was begun all participants successfully met the training criterion (83% correct) using one training coworker. The participants met the training criterion within an average of 8 training sessions and a range of 4 to 12 sessions.

Insert Figure 1 about here

Jon and Mark required one training coworker exemplar, whereas Don required two and Earl required three exemplars before generalization occurred to natural coworkers (see Figure 2). On session #13 Don emitted 83% of the social behaviors, but did not generalize the behaviors during the subsequent probe session, and consequently training was begun with a second training coworker. A significant drop in performance occurred as a result of the change of trainers. Generalization was seen following three additional sessions of training with the second coworker.

Insert Figure 2 about here

Similarly, Earl reached the criterion of 80% on session #44, yet showed no attempts to generalize (see Figure 2). He showed a slight drop in performance upon the introduction of coworker #2. He again reached criterion on session #48; yet still failed to generalize. A third training coworker was begun, resulting again in an initial decrease in performance. Generalization occurred on session #52 following three sessions of training with coworker #3.

For two participants, Mark and Jon, generalization occurred using one training coworker prior to the acquisition of less than 80% of the social behaviors (see Figure 2). Mark began to generalize the trained behaviors to natural coworkers following 11 sessions of training at which time he successfully emitted 67% of the social behaviors. Jon generalized after two training sessions and at a performance level of 16% independently produced social behaviors.

Training sessions and generalization probe sessions occurred daily as is shown in Figures 1 and 2. Missing data points reflect either the absence of the participant or training coworker, the work site being closed that session, or termination of the session due to the occurrence of aberrant behavior. Two sessions were terminated with Mark for failure to heed a warning. No sessions were terminated with the other three participants.

Figure 2 shows the cumulative number of generalized interactions and was produced by calculating the number of

occurrences of the approach, greeting, and offering steps from the task analysis. All participants generalized to three or more coworkers in the natural break setting (mean = 4.0 different coworkers).

When the participants generalized the social interaction responses, they approached only one coworker per breaktime, as was taught within the training sessions. This frequency of initiation was considered appropriate social behavior. Repeated greetings and offers of coffee within the restricted time and space available would have appeared unnatural and unusual, even under circumstances when the coworker turned down an offer. Typical break behavior among nonhandicapped employees in these two settings was characterized by locating a place to sit and remaining in that place for the duration of the break while smoking, drinking coffee, tea, or cola, and conversing or reading a magazine. Don, Jon, and Earl showed a consistent pattern of generalization. That is, once generalization occurred these participants consistently initiated one interaction per session. Mark, however, generalized less consistently, in that once he first generalized (session #29) he did not generalize during all of the other sessions (e.g., #s 30 and 33).

Descriptive Data

Of the 25 interactions initiated by the four participants, 3 were classified as active-avoidance interactions, 15 as passive willingness interactions, and 7 as active willingness interactions. Anecdotal information showed that three initiations

by a participant resulted in a negative reaction by a coworker in the natural break setting. All negative reactions occurred in the break room at the retirement complex.

Jon and Mark produced untrained, spontaneous social remarks to natural coworkers on 2 and 3 sessions, respectively. These social expansions occurred after the initial occurrences of generalization (for Jon, on session #29 and #31, for Mark on sessions #s 32, 34, & 36) and took the form of initiations and responses. The content of the expansions included identification of particular points of interest in ads in a magazine and things to do and people to see after work or that weekend. In instances when Jon and Mark spontaneously produced extended interactions, coworkers typically responded by saying "Oh, that's nice" and attending to the participant. They did not, however, reciprocally extend the interaction.

A total of 7 of the 25 interactions (28%) were characterized by an active willingness to interact with the autistic workers. Typically, the positive interest in the participant by the coworker was evidenced by asking direct, simple questions, such as, "What did you do this weekend?" or "What have you been doing?" On two occasions the natural coworker introduced the participants to other coworkers at the break table.

Discussion

A group of autistic youth were successfully taught to converse in a vocational break environment. The students were taught an extended chain of behavior that contained both social and motor responses. The study replicated previous work with autistic students where extended social chains were taught within

a leisure context (Gaylord-Ross et al., 1984) and nonhandicapped peers were used as training agents (Egel, Richman, & Koegel, 1981; Gaylord-Ross et al.).

The study also demonstrated the ability of students with severe impairments to learn in natural, community-based settings. Brown et al. (in press) have pointed to the importance of training the severely handicapped students in the natural, criterion environment like a work site, an apartment residence, etc. When training is conducted in natural settings, the problem of forcing generalization of skills from classroom simulations to real life environments is eliminated. While three out of four of the participants in the present study had previously received similar training of extended social chains within the high school setting, no spillover was seen in one of the criterion environments, the natural work site. Consequently, it was necessary to train directly in the community environments. For future study, an examination of the effects of direct community training on performance generalization to other similar community settings would be necessary in order to determine whether training social work behavior within volunteer work sites is sufficient to produce similar behavior in future work environments.

Overall, both the retirement facility and the restaurant were successful targets for volunteer employment. The employees were quite acceptant of the students. The qualitative recordings of the responses made by nonhandicapped coworkers, specifically in the break setting, indicated only 3 out of 25 instances where avoidance responses were made following initiations of the autistic students. There was some active willingness by the

coworkers to continue the interaction. The largest proportion of coworker responses was to respond in a polite manner but not to extend the interaction. Thus, the bids by the students did lead to meaningful social responses of different types by the coworkers, i.e., an interaction occurred.

All avoidance reactions occurred following an approach made by one participant in the break room of the retirement facility. To achieve successful integration in the future, it may be helpful to analyze the kinds of settings where the contact group is more or less responsive to bids from handicapped persons based on the work responsibilities of the employees. The coworkers in the retirement facility, for example, might have exhausted their interest in interacting with "clients" during their working time and had little interest in engaging in perceived "caretaking" interactions during their break. It is important for future research to examine the varieties of social environments in school and work settings with respect to their responsiveness to social bids from handicapped persons.

In the present study the autistic students generalized their social behaviors across people, from nonhandicapped peers to nonhandicapped coworkers. The number of peers or training exemplars needed to promote generalization varied from one to three across the four students. For two participants, repeated training with one exemplar was sufficent to produce generalization; that is, once these students were able to accurately produce context specific social responses, they generalized their behavior to a variety of natural coworkers. For two participants, generalization required two or three exemplars.

Thus, the study did not shed light on the critical number of exemplars needed to promote generalization (cf., Stokes & Baer, 1977).

Some evidence of response generalization was noted for two of the participants on two and three occasions, respectively. Future work in this area might produce greater amounts of response generalization under more flexible, loose training conditions than were used in the present study. While the present research allowed flexibility in the syntactical presentation of trained social responses, because of the limited language capabilities of the participants, little was done to systematically encourage spontaneous production of novel social responses. A strategy which trains a variety of initiations and responses preceding and subsequent to a variety of nonhandicapped behaviors might encourage the emission of a wider variety of untrained social behaviors. Additionally, training social responses under distributed learning conditions, for instance at appropriate times throughout the work day, might aid in developing a greater social repertoire for the handicapped individual. Finally, during work, rather than breaktime, there was no interaction between the handicapped students and their coworkers. Perhaps if interaction had occurred at this time there would have been a greater proclivity to interact at breaktime. Overall, the study was successful in teaching previously isolate autistic youth to make social bids and extended social interactions toward nonhandicapped coworkers in a community-based vocational site.

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Table 1

Training Script for Autistic and Nonhandicapped Students

Autistic Student	Nonhandicapped Student
1. Hi, how are you?	
	2. Fine. Not bad. Pretty good. Great.
3. Would you like coffee?	
	4. Sure. Yes. That would be great. No thanks.
5. What's new?	
	6. Oh, not much. They started me on a new job today. 7. What have you been doing at work?
8. Doing dishes. Putting dishes away. Watering. Raking. Weeding.	
	9. I gotta go. Take it easy.
10. Take it easy.	

Table 2

Task Analysis of Breaktime Social Sequence

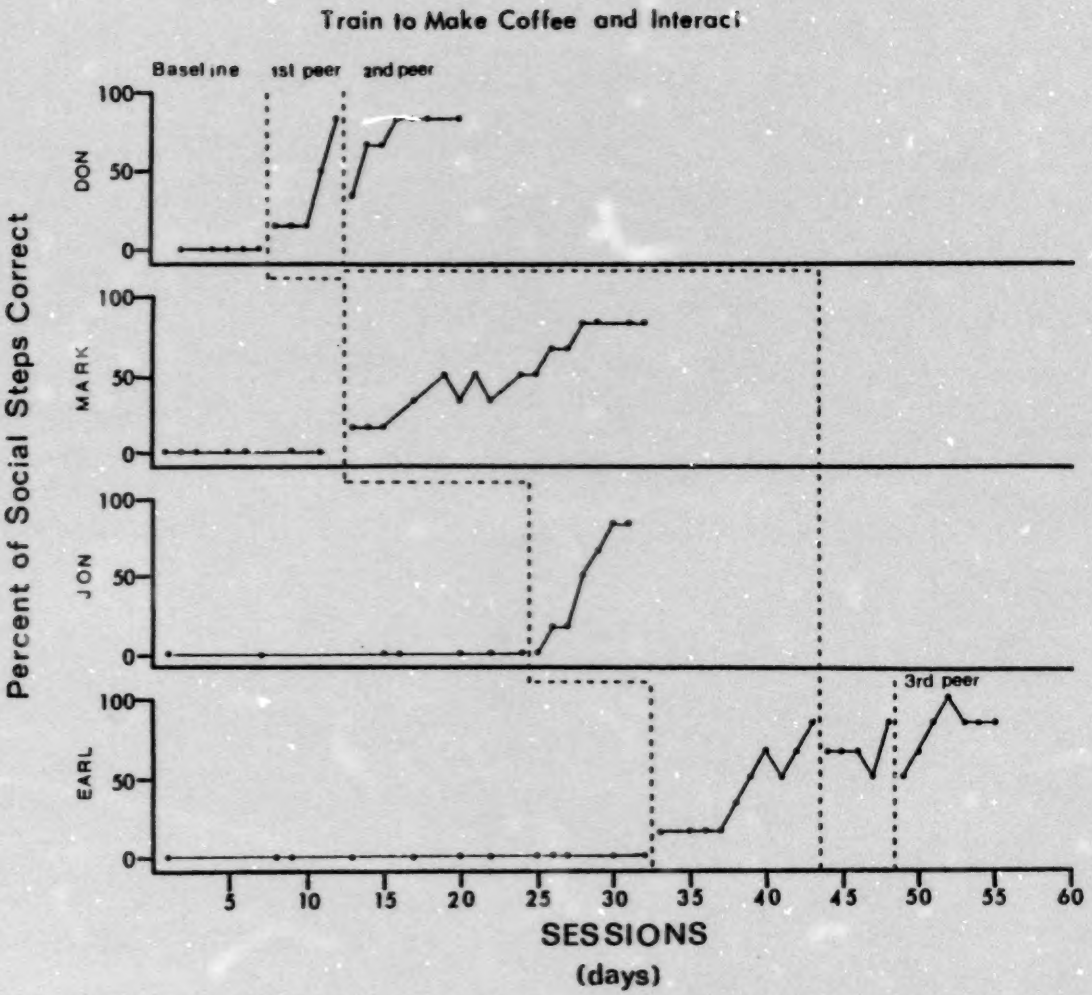
1.	S. leaves work area.
2.	S. pours a cup of coffee.
3.	S. adds 1 spoon/packet of sugar.
4.	S. adds 1 ounce of milk.
5.	S. takes coffee to any table and sits down.
*6.	S. asks familiar NH coworker/peer, "Hi, how are you?"
*7.	S. asks NH "Would you like coffee?"
8.	S. pours a cup of coffee for NH.
*9.	S. hands coffee to NH.
*10.	S. asks NH "What's new?"
*11.	S. responds appropriately to NH question "What have you been doing at work?" (i.e., "doing dishes," "raking," "weeding.")
*12.	S. responds to NH statement "Take it easy" with "Take it easy."
13.	S. returns to work.

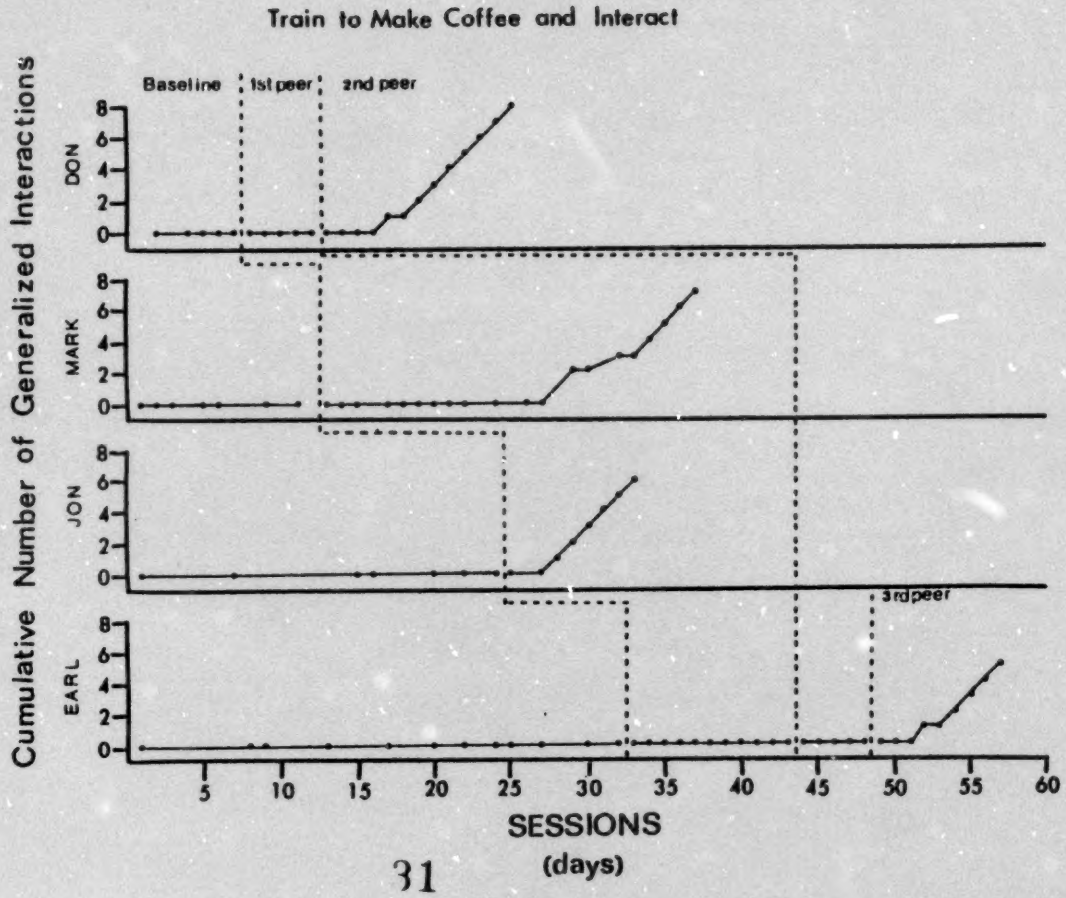
Note. Steps with asterisks are social behaviors. Steps without asterisks are motor behaviors.

Figure Captions

Figure 1. Percentage of social behaviors in the task analysis independently produced during training sessions.

Figure 2. The cumulative number of independent interactions initiated by autistic workers toward nonhandicapped coworkers during vocational break probe settings.


Train to Make Coffee and Interact
Baseline
1st peer
2nd peer
3rd peer
DON
MARK
JON
EARL
100
50
0
5
10
15
20
25
30
35
40
45
50
55
60
SESSIONS
(days)
Percent of Social Steps Correct


Train to Make Coffee and Interact
Cumulative Number of Generalized Interactions
Baseline
1st peer
2nd peer
3rd peer
DON
MARK
JON
EARL
0
2
4
6
8
5
10
15
20
25
30
35
40
45
50
55
60
SESSIONS
(days)